



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/605,854  | 10/31/2003  | Brian T. Denton      | BUR920020087US2     | 2853             |
| 24241   | 7590        | 08/08/2006           | EXAMINER            |                  |
| IBM MICROELECTRONICS<br>INTELLECTUAL PROPERTY LAW<br>1000 RIVER STREET<br>972 E<br>ESSEX JUNCTION, VT 05452 |             |                      | RAO, SHEELA S       |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2125                |                  |

DATE MAILED: 08/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/605,854

Applicant(s)

DENTON ET AL.

Examiner

Sheela Rao

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5/20/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. Claims 1-22 are pending and presented for examination.
2. Applicant's submission of references on form PTO-1449, filed May 20, 2006, has been considered. A signed copy of the form is attached.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 3- 12 and 14-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 & 12:

Step b) is directed to a "sequencing production ..." however, how this step is carried through is not clearly defined and understood. Also, the limitation causes confusion since the whole plan or parts of a plan are being sequenced is not defined. The "start variables" is also not clearly defined because what these start variables pertains to is not understood. Furthermore, "variables" as used in the claim renders more than one or plural datum, again the limitation is not sufficiently defined. Additionally, "the bill of material" lacks proper antecedence and "degree of infeasibility" comprises no clear and proper definition. Also, "degree of infeasibility" is a term of degree with no metes and bounds.

Step c) claims the "modifying production ...", here "production starts" is stated, again plural datum is implied but not clearly identified. The phrase "such that the resulting solution satisfies lot-size constraints and production constraints" does not establish a relationship with/to nor provide a nexus with the rest of the claim, so "such that ..." is not properly supported.

Additionally, the claim language possesses inconsistent language between steps b and c and is grammatical awkward; wherein, the “sequencing production start variables” and the “modifying production starts” do not agree.

Claims 3-4 & 14-15:

The claims further limit the step of a “sequencing production ...” however, how this step is carried through is not clearly defined and understood. Also, the limitation causes confusion since the whole plan or parts of a plan are being sequenced is not defined. The “start variables” is also not clearly defined because what these start variables pertain to is not understood. Furthermore, “variables” as used in the claim renders more than one or plural datum, again the limitation is not sufficiently defined.

Claims 5-6 & 16-17:

These claims use the phrase “set of permissible values” in their limitations. The term “permissible” is used as a term of degree for defining constraints. When a term of degree is used as a limitation, it is necessary to determine whether the specification provides some standard for measuring that degree. See *Seattle Box Company, Inc. V. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 221 USPQ 568 (Fed. Cir. 1984). In this case, the specification does not enable one skilled in the art to reasonably establish what may be construed as being within the metes and bounds of the word of degree. Therefore, one of ordinary skill in the art would not be appraised as to the claimed invention's scope when the claims are read in light of the specification. See *Ex parte Oetiker*, 23 USPQ2d 1641.

Claims 7 & 18:

Step a) claims “separating production start variables”, again the “start variables” are not clearly defined. The “start variables” is not clearly defined because what these start variables pertain to is not understood. Furthermore, “variables” as used in the claim renders more than one or plural datum, again the limitation is not sufficiently defined.

Step b) claims "relaxing imposed lot-sizing constraints using linear programming methods". The step of "relaxing" as claimed seems to be addressing the programming. Usually, constraints are "relaxed" not the programming. The limitation presents grammatically awkward phrasing, which leads to vagueness in the claim language.

Claims 8 & 19:

The "start variables" is not clearly defined because what these start variables pertain to is not understood. Furthermore, "variables" as used in the claim renders more than one or plural datum, again the limitation is not sufficiently defined. Additionally, "the bill of material" lacks proper antecedence and "degree of infeasibility" comprises no clear and proper definition.

Claim 9 & 20:

The step of "iteratively solving" is grammatically awkward and contributes to the vagueness of the claimed limitation.

Claims 10-11 & 21-22:

The claimed "relaxed linear program" lacks proper antecedence.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-22 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5,408,663 issued to Miller.

Miller teaches of a method for operating a digital computer to optimize project scheduling. In doing so, the patented invention by Miller discloses the limitations of the instant invention as can best be understood.

The reference of prior art teaches of adjusting the starting and ending times of various tasks until the maximum resource demand for each time is optimized. The method uses linear programming techniques to achieve such optimization goals. Furthermore, the reference states that the data that is input includes data defining factors of duration, cost, and/or risk. A method as taught by Miller at column 5, beginning at line 27, is explained as testing each task on the working schedule to determine whether or not the resources allocated to the task would permit completion of the task in a shorter duration than the duration assigned to the task in the schedule, if so, generating a positive test signal, fulfilling a degree of feasibility. This testing process is continued until no positive signal, a degree of feasibility, is generating. Thereby, indicating that the last computed working schedule is substantially an optimum schedule.

Miller, as can be best understood by the language of the instant claims, teaches the limitations of the instant invention. Thereby, rendering the instant claims anticipated and unpatentable.

### **Conclusion**

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

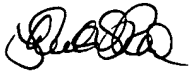
|  |                 |
|--|-----------------|
| US Patent Application No. US 2004/0030428 A1 | Crampton et al. |
| US Patent Application No US 2002/0156669 A1  | Verbaegh et al. |
| US Patent Application No US 2003/0229550 A1  | DiPrima et al.  |

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela Rao whose telephone number is (571) 272-3751. The examiner can normally be reached Monday - Wednesday from 8:30 am to 4:30 pm.

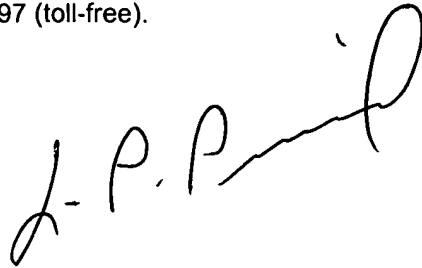
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard, can be reached on (571) 272-3749. The fax number for the organization where this application or any proceeding papers is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from

either Private PAIR or Public PAIR. It should be noted that status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should any questions arise regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sheela S. Rao  
August 1, 2006



LEO PICARD  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100